PATENT COOPERATION TREATY

From the

INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

NAN JING LAW OFFICE
OF INTELLECTUAL PROPERTIES

2F, NO.177 Guangzhou Road Nanjing Jiangsu 210024 China

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

Nanjing Jiangsu 210024 China		(PCT Rule 43 bis.1)		
		Date of mailing (day/month gear)	AY 2004 (1 3 · 0 5 · 2 0 0 4	
Applicant's or agent's file reference ZSSPCT040001		REPLY DUE	within months/days from the above date of mailing	
International application No.	International filing da			
PCT/CN2004/000029 09.Jan. 200		(09.01.04) 07.Jan. 2004 (07.01.04)		
International Patent Classification (IPC) or I	ooth national classification IPC B2	•	_	
Applicant				
	ZHU xi	udong		
This opinion contains indications relati	ng to the following item	5.		
☐ Box No. IV Lack of unity of it☑ Box No. V Reasoned statement	nt of opinion with regard nvention it under Rule 43 <i>bis</i> .1(a)(nations supporting such scited the international applicat	i)with regard to novelon statement	step and industrial applicability ty, inventive step or industrial applicability;	
2. FURTHER ACTION				
International Preliminary Examining At Authority other than this one to be the IPE written opinions of this International Sear	athority ("IPEA") exce EA and the chosen IPEA ching Authority will not asidered to be a written ropriate, with amendme	pt that this does not has notified the Intern be so considered. opinion of the IPEA, nts, before the expirat	considered to be a written opinion of the apply where the applicant chooses an lational Bureau under Rule 66.1 bis(b) that the applicant is invited to submit to the ion of 3 months from the date of mailing hever expires later.	
For further options, see Form PCT/ISA/220.				
To talked options, see Form Forms, v220.				
For further details, see notes to Form PCT/ISA/220.				
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Name and mailing address of the ISA/ State Intellectual Property Office of P. R. China No. 6 Xitucheng Road, Jimen Bridge, Haidian District 100088 BEIJING, P.R. CHINA

Authorized officer

YANG kaining

Facsimile No. 86-10-62019451

Telephone No. 86-10-62085380

WRITTEN COON OF THE INTERNATIONAL SEARCHING AUTHORITY

Internation Vo.

citations and explanations supporting such statement				-
1.	Statement:			
	Novelty (N)	Claims	2-10	Yes
		Claims	I	No
	Inventive step (IS)	Claims	<u> </u>	Yes
		Claims	2-10	No
	Industrial applicability (IA)	Claims	1-10	Yes
		Claims		 No
	•		•	

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;

2. Citations and explanations

Box No. V

- 1. The following documents are mentioned in this written opinion:
- D1: JP55-73442A (see the whole document)
- D2: JP11-285779A (see the whole document)
- 2. The subject matter of Claim 1 does not meet PCT Article 33(2) (novelty) since the document D1 discloses all of the technical features of claim 1.
- 3. Claims 2 to 10 meet PCT Article 33(2) (novelty) since the document D1 or D2 does not disclose all of the technical features of claims 2 to 10.
 - 4. The subject matters of Claim 1 to 7 do not meet PCT Article 33(3) (inventive step)

Though the document D1 or D2 does not disclose the appended technical feature of dependent claim 2, in order to increase the path and the time of the baked sand in the furnace, thereby obtain the heating of the baked sand thoroughly, the above technical feature is obvious for the skilled person in this art. Accordingly, the claim 2 does not meet PCT Article 33(3).

The appended technical features of the dependent claims 3 to 10 are disclosed by D2 or D1 or the common knowledge of this art respectively, so the claims 3 to 10 are obvious for the person skilled in this art according to D1 and D2/or the common knowledge of this art. So the claims 3 to 10 do not meet PCT Article 33(3).

5. The subject matters of Claim 1-10 meet PCT Article 33(4) (industrial applicability) since the solutions are considered as industrially applicable.

Во	x No	. I	Basis of the opinion
1.			gard to the language, this opinion has been established on the basis of the international application in the language in was filed, unless otherwise indicated under this item.
		Th	is opinion has been established on the basis of a translation from the original language into the following language, which is the language of a translation furnished for the purposes of: international search (under
		Ru	les 12.3 and 23.1(b))
2.			ard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed n, this opinion has been established on the basis of:
	a.	type	of material
			a sequence listing table(s) related to the sequence listing
	b.	forn	nat of material in written format
			in computer readable form
	c.	time	of filing/furnishing
			contained in the international application as filed.
			filed together with the international application in computer readable form.
		Ļ	furnished subsequently to this Authority for the purposes of search.
٠t		appli	shed, the required statements that the information in the subsequent or additional copies is identical to that in the cation as filed or does not go beyond the application as filed, as appropriate, were furnished.
- .	Auc	111011	a comments.
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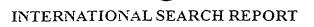


PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference ZSSPCT040001	FOR FURTHER see Notification ACTION (Form PCT/ISA)	of Transmittal of International Search Report
International application No.	International filing date (day/month/ye	(220) as well as, where applicable, item 5 below
PCT/CN2004/000029	09.Jan. 2004 (09.01.04)	The same trees worth (ash)
Applicant	(07.01.04)	07.Jan. 2004 (07.01.04)
	ZHU xudong	-
This international search report has been p to Article 18. A copy is being transmitted t	repared by this International Searching Au o the International Bureau.	thority and is transmitted to the applicant accor
This international search report consists of It is also accompanied by a copy of	a total of 3 sheets. f each prior art document cited in this repo	
1. Basis of the report		
the international search was care Authority (Rule 23.1(b)).	ise indicated under this item. ied out on the basis of a translation of the	
Certain claims were found unseUnity of invention is lacking (see	archable (see Box No. II).	the international application, see Box No. I.
4. With regard to the title,		
the text is approved as submitted		
the text has been established by t	nis Authority to read as follows:	
Wish area to the		•
With regard to the abstract,		
the text is approved as submitted b		
ine text has been established, accor	ding to Rule 38.2(b), by this Authority as it	appears in Box IV. The applicant may, within
with regard to the drawings,	of this international search report, submit	comments to this Authority.
a. The figure of the drawings to be publish	ed with the abstract is Figure No. 1	
as suggested by the applicant.		
as selected by this Authority, bed as selected by this Authority, bed	ause the applicant failed to suggest a figur ause this figure better characterizes the inv	re. vention
b. \square none of the figures is to be published		
PCT/ISA/210(first sheet)(January 2004)		



International application No.
PCT/CN2004/000029

A. CLASSIFICATION OF SUBJECT MATTER

IPC7 B22C5/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7 B22C5/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Chinese Invention, Chinese Utility Model

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPI, EPODOC, PAJ, CNPAT

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP, A, 55-73442, (TOYOTA MOTOR CORP) 03.Jun.1980(03.06.80). (see the whole document)	1-2
Y		3-10
Y	JP, A, 11-285779, (OSAKA GAS CO. LTD) 19.Oct.1999(19.10.99), (see the whole document)	3-10
X	JP, A, 2000-61578, (TOKYO GAS CO. LTD) 29.Feb.2000(29.02.00), (see the whole document)	1-2
Y		3-10
А	JP, A, 55-86645, (DAIWA SEISAKUSHO KK) 30.Jun.1980(30.06.80), (see the whole document)	1
A	JP, A,7-328741, (JIDOSHA IMONO KK) 19.Dec.1995(19.12.95) ,(see the whole document)	1
A	CN, Y, 2162314, (QIN shengyi) 20.Apr.1994(20.04.94). (see the whole document)	1

- ☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.
- * Special categories of cited documents:
- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim (S) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of mailing of the international search report

Date of the actual completion of the international search 01.Apr. 2004 (01.04.04)

No. 6, Xitucheng Rd. Haidian District, Beijing, China (100088)

1 3 · MAY 2004 (1 3 · 0 5 · 2 0 0 4)

Name and mailing address of the ISA/CN

Authorized officer

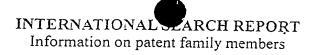
YANG Kaining

Telephone No. 86-10-62085380 .

Form PCT/ISA /210 (second sheet) (January 2004)

Facsimile No. 86-10-62019451

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International application No.
PCT/CN2004/000029

JP, A ,55-73442	03.Jun. 1980	JP ,B, 57042413	08.Sep. 1982
	`	JP, C, 1150701	14.Jun. 1983
JP, A, 11-285779	19.Oct. 1999	NONE	
JP ,A ,2000-61578	29.Feb. 2000	NONE	
JP, A ,55-86645	30.Jun. 1980	NONE	
JP, A ,7-328741	19.Dec. 1995	NONE	
CN, Y .2162314	20.Apr. 1994	NONE	

PCT/CN2004/000029

HEATING APPARATUS FOR FOUNDRY SAND

The present invention involves a heating apparatus for the foundry sand. This heating apparatus includes a furnace body, an inlet of sand, a dust and fume extraction port, a furnace cavity, and an outlet of sand. The inlet of sand is provided in the upper portion of the furnace body, a burner port is provided in the lower portion of the furnace body, a heat exchanger is provided in the furnace cavity of the middle of the furnace body. The apparatus can be used for the heating or baking of the new sand and used sand.